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U. S. DEPARTMENT OF AGRICULTURE

DIVISION OF ACCOUNTS AND DISBURSEMENTS

RELATIONS BETWEEN THE
DEPARTMENT OF AGRICULTURE AND THE STATE COLLEGES AND
EXPERIMENT STATIONS.

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In view of the growing work of this Department and of the State Agricultural Colleges and Experiment Stations questions are constantly arising regarding the relationships which should exist between these important institutions. These questions are becoming more and more important because of the great growth of the Extension Service and Demonstration Work of the Department and of the State Agricultural Colleges and Experiment Stations. It seems desirable that these relationships should be considered by the Department in all of their important bearings, and for this purpose a conference has been called for Monday, April 21, 1913, at 2:30 p. m., to be held in the Conference Room, No. 208 West Wing.

In order to secure the views of various workers in the Department Messrs. A. C. True, W. A. Taylor, Bradford Knapp, W. T. Swingle, W. J. Spillman, K. F. Kellerman, David Fairchild, Milton Whitney, L. C. Corbett, E. W. Allen, and C. S. Scofield have each been asked to prepare a five-minute paper for presentation at the conference, taking the subject "The

Work of the Department and its Relation to that of the State Agricultural Colleges and Experiment Stations." In the preparation of these papers the following points are suggested for consideration:

(1) What should be the relations of the Department to State Agricultural Colleges and Experiment Stations and what their relation to the Department.

(2) What should be the future policy of the Department in shaping its work so as to meet the demands of the people and at the same time support and uphold the institutions within the States.

(3) What should be the future policy of the Department in the organization of demonstration and similar work so far as it relates to State institutions.

(4) How may closer relations be brought about with the State Agricultural Colleges and Experiment Stations.

(5) How may duplication of effort be avoided.

B. T. Galloway,

Assistant Secretary.

The following papers were presented and read:

A. C. True, Director,
Office of Experiment Stations.

The discussion is limited to the organization of agricultural research, education, and extension. The key-notes are found in individual and local initiative and self help, State autonomy, and Federal

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advice and assistance. The State institutions are organized under Federal and State legislation, with authority to cover the whole field of agricultural research, education, and extension. Their inability to do this is due largely to lack of funds. Federal support directly for research and extension has come about largely because the Federal Government has been rich and the States have not fully met popular demands.

The Department and the State institutions should secure a division of the field through mutual understanding, arrived at on practical rather than theoretical considerations, and determined by the available funds, personnel, equipment, etc., of the Department and of the State institutions respectively. In a general way the field may be divided along three lines; (1) Things the Department can best do by itself, (2) things the State institutions can do, and (3) things which can best be conducted cooperatively. This plan would call for readjustment of the division from time to time.

The essential basis of satisfactory cooperation is its reality. This involves the recognition of equality of the cooperating parties and their natural desire to have the cooperation mutual, rather than the imposing of the will and plans of one party on the other.

Since the field of the State institutions covers the several States, cordial relations with the Department are not likely to exist unless the Department courteously informs the State institutions in advance whenever it plans to take up a new line of work within their State borders, and takes pains to keep the institutions informed of the plans and scope of its work. A full understanding at the outset will prevent

friction and promote harmony.

The Department should consciously exercise self-restraint and keep its operations well within defined limits. New propositions should be conservatively dealt with. New projects should be carefully made in the Bureaus and reviewed by the general officers of the Department or by committees acting under their direction before they are put into operation.

The success of the Department's policy will depend very largely on its infusing the rank and file of its agents with a spirit of sympathy and helpfulness toward the State institutions.

As regards the funds granted by Congress to the State institutions but administered by the Department, a broad and firm policy should be pursued. High standards of performance should be set up and the institutions led to measure up to these progressively and through their own initiative.

The Department should keep in close touch with the State institutions and their general Association, and acquire such knowledge of their conditions and sentiments as will enable it to take action with reference to them in an intelligent way. The Department is already a member of the Association. It might well be represented on a standing Committee on Relations of the Department and the State Colleges and Stations. This plan has been largely followed by the Office of Experiment Stations with good results.

More effort should be made to reach the governing boards of the State institutions. The weaker and more ill-managed the State insti-

tuition, the more the Department should seek to strengthen it rather than supersede it. The State institutions should be made to feel that they are the natural associates and allies of the Department and not its rivals. The Department should invite frank expression of opinion about its policies and work. Publicity and discussion furnish the best opportunity for invalidating and checking unreasonable criticism and misunderstandings.

It is not so important that the Department should have large appropriations for research and extension work as that Congress should enable it to employ the strongest and best-equipped men and give them opportunity to work under the best conditions. Mediocre bigness would be very deplorable.

The field to be occupied by the State institutions and the Department is so large that all workers may have plenty of room for many years. The problem is to give each man his best chance and make him feel that he must stick to it and work heartily and sympathetically with all his fellows.

The leadership of the Department should come through the intrinsic merit of its plans and operations and the high character and ability of its managers rather than through the amount of money it has to distribute.

Public institutions for agricultural promotion through education, research, and extension work in the United States must rest on a broad

basis of popular support rather than on the will of corporations or the Government. This means patient and persistent efforts on the part of leaders to help the people to adopt and maintain wise policies regarding the management of their institutions. It is necessarily a long process, but in the end the best results will be obtained. Creation by evolution is more difficult and time-consuming but more satisfactory than creation by fiat.

Mr. Wm. A. Taylor,
Chief, Bureau of Plant Industry.

When Congress in 1862 created a separate Department of Agriculture it provided in the organic act which President Lincoln approved on May 15 of that year that the "general design and duties" of the Department should be "to acquire and to diffuse among the people of the United States useful information on the subjects connected with agriculture in the most general and comprehensive sense of that word."

The Morrill Act, which was approved July 2 of the same year, provided for a grant of lands to each of the several States which should claim the benefit of the Act "to the endowment, support and maintenance of at least one college, where the leading object shall be x x x to teach such branches of learning as are related to agriculture and the mechanic arts, in such manner as the legislatures of the States may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life."

The Hatch Act, approved March 2, 1887, provided "That in order to aid in acquiring and diffusing among the people of the United States useful and practical information on subjects connected with

agriculture, and to promote scientific investigation and experiment respecting the principles and application of agricultural science, there shall be established under direction of the college or colleges or agricultural department of colleges in each State or Territory x x a department to be known and designated as an 'agricultural experiment station.'" The object and duty of the experiment stations in the matter of research and experiments is set forth specifically in considerable detail, concluding with the language: "and such other researches or experiments bearing directly on the agricultural industry of the United States as may in each case be deemed advisable, having due regard to the varying conditions and needs of the respective States or Territories."

It would appear that the duties and fields of these three public agencies for the betterment of American agriculture may be fairly outlined as follows:

(1) The duty of the Department is to investigate and to teach. It must acquire and diffuse information relating to agriculture, in addition to the important supervisory and regulatory functions which have been added from time to time through legislation.

(2) The primary duty of the agricultural college is to teach.

(3) To this the Hatch bill added specifically the experiment station, the duty of which is to experiment and to investigate agricultural problems, "having due regard to the varying conditions and needs of the respective States or Territories."

The colleges and experiment stations are obligated to serve their several State constituencies; the Department to ~~serve~~ serve all of these; and this without any legislative restriction or very definite suggestion

as to where the line of separation between the State and Federal agencies should be drawn.

I am not unaware that the view has been held by certain eminent leaders in agricultural research that the gratifying and rapid enlargement of the work of the colleges and experiment stations has removed much of the necessity for experimental research by the Federal Department, nor that there is a considerable number of able men in the agricultural colleges who feel strongly that any direct instructional contacts established between the Federal Department and the people of their States constitute unwarranted encroachments upon their fields and are likely to result in harmful interference with their constituencies. But with the mutual recognition of the obligations that have been imposed upon both the Federal and the State agencies by the American people through National legislation it seems clear that each must proceed with its appointed task.

Elements of possible danger in the situation which result from the apparent overlapping of authority and functions are, of course, the possibility of unprofitable duplication of effort and the development of harmful friction between individuals or groups of workers. There have been some instances of both of these undesirable features in the experience of recent years. An obvious advantage of the present arrangement is that a wholesome and stimulating degree of competition in both research and demonstration work is maintained--a condition more conducive to a maximum product of useful results than where fields of effort are jealously and legally restricted or separated by barriers

that tend to prevent a prompt and effective completion and application of a discovery in the natural sciences or economics when a promising lead is struck by an individual worker or group of workers.

It goes without saying, I take it, that in view of the older and broader charter of the Federal Department its work should be chiefly concerned with the broader regional or National problems and such as affect entire phases of our agricultural industries, encouraging the State institutions to handle distinctively local and State questions, with special reference to the peculiar needs of their respective constituencies. To the extent that the Department is able to do this the whole question of institutional and personal relations will be simplified. Whether cooperative prosecution of work on a particular problem appears advisable or not, the establishing and maintenance of courteous and friendly relations with the personnel of the State institutions is essential to the maintenance of a wholesome personal and institutional state of mind.

The relations of the Department to the State agricultural colleges and experiment stations should be constructively helpful as well as sympathetically courteous and friendly. In the main this has been true in the past, but sympathetic attention to the matter by Department workers in their several lines would doubtless produce improvement in some instances. The personnel of the colleges and stations as well of the Department consists of men of varied temperament, training, and experience, who react very similarly to courtesy, fair play, and frankness, as well as to contrary practices.

The future policy of the Department in the shaping of its work, it seems to me, should take steadily into account the importance of aiding the development and usefulness of the experiment stations as research institutions in every proper way. A large proportion of the research problems in many fields must, from the nature of the case, be handled by them. The Department, through its specialists who come in touch with the people in the several States, can do much to strengthen these institutions with their constituencies when opportunity is afforded to emphasize the need of adequate support or to commend meritorious work already done.

If the Department is equipped for and does in a State work that is useful and that is appreciated by the people interested in the agricultural industry which it specifically affects, it can sometimes be turned to good account for the station by emphasizing the importance of better equipping the State institutions for work in related and more local fields. The recent marked awakening of public interest to the needs of the college of agriculture and experiment stations in one of our greatest agricultural States has apparently been to a considerable extent due to the example of effective work in that State by Department forces, and the insistence of the Department men concerned with it, both in Washington and in the field, that the industry or the State itself should equip and develop its own agencies for local extension and application rather than rely upon the Federal Government for long-continued aid on local problems.

Demonstration and similar work, being as it is a form of instruction, is necessarily very closely related to the work of the agricult-

ural colleges. In the main it would seem to be peculiarly subject to development by the Department and the colleges along cooperative lines, with a view to being eventually so handled in all cases. But to avoid the possibility of its becoming unduly provincial and narrow in its general direction should, for a time at least, rest in the Department. In this way the advantage of the observation and experience of Department workers along broad lines can be retained, while at the same time the development of local initiative can be encouraged, and that contact with the soil and the men on the soil maintained which is essential to the preservation of practical efficiency in all such work. Both the colleges and the Department should give careful thought and effort to the working out of such plans of cooperation as will insure the most practical and effective adjustment and most helpful and sound institutional relation of the Federal and State agencies in this field, including definite responsibility for efficiency of work and for expenditure of and accounting for funds.

Closer relations between the Department and the Stations can be brought about through more frequent exchange of views in friendly conference. Differences in the past have frequently been the result of misunderstanding of motives or of the actual character of the work undertaken, due to insufficiency of information as to the type and extent of work contemplated. Larger representation of the scientific as well as the administrative force of the Department at the annual meetings of the Association of Colleges and Experiment Stations would be helpful in this respect, and an occasional called conference between the administrative officers of the Stations and those of the Department would undoubtedly be helpful.

Harmful duplication of effort could, to a large extent, be prevented from the Department's side by consulting the Office of Experiment Stations before undertaking new lines of work that may be contemplated either on Department initiative or as the result of unrequested appropriations by Congress. In the latter case not infrequently Station work already under way can be strengthened and made more effective through cooperative effort, on lines of work which the Department is required to take up. Threatened duplication through ill-considered Federal legislation can frequently be prevented through friendly Departmental advice to Members of Congress, who do not always appreciate the importance of avoiding unnecessary duplication of work by the Federal and State institutions.

Mr. Bradford Knapp
In Charge of Farmers' Cooperative Demonstration Work.

The Act of Congress creating the Department of Agriculture provides as follows: "the general design and duties of which shall be to acquire and to diffuse among the people of the United States useful information on subjects connected with agriculture in the most general and comprehensive sense of that word, and to procure, propagate, and distribute among the people new and valuable seeds and plants." Under this authority there has grown up a Department of large proportions, with a multitude of different lines of work. All these lines, however, may be readily classified under certain general heads or functions exercised by the Department, as (1) administrative, (2) research; (3) the enforcement of regulations or police power; and (4) informational

or extension service, which includes extension work, demonstration, and publication of results.

Except along lines of exercise of police power, such as the enforcement of the Pure Food Law, inspection of meat, operation of forest reserves, and other lines of work which might be mentioned, the efforts of the Department in research and in extension and demonstration work are not of a character to make them inherently antagonistic to or in conflict with similar activities upon the part of the States. In enforcement of law, the functions of Federal and State authorities must be kept separate, but in pure service or educative effort there is no necessary conflict of authority. Both the Department and the State College may render service to the same farmer in the same community without necessary conflict. The helpful effort which finds truth through research and translates that truth into common practice on the farm through demonstration, in no way antagonizes others who may be doing the same thing.

Administrative difficulties occur, nevertheless. If the relation of the Department to the State Agricultural Colleges and Experiment Stations could be a cooperative relation along all lines except as to those functions of the Department's work which involve the exercise of police powers, it would seem to me to be helpful. Such cooperative understandings would prevent duplication and promote efficiency. In shaping its work to meet the demands of the people, the Department has the difficult task of harmonizing its efforts within the State with the institutions provided by the State itself, hence no hard and fast rule can be adopted. The established law or custom of the State need not be disturbed.

In research work, cooperative effort along such lines as the Department sees fit to enter within the State would assist the Experiment Stations and likewise the Department. Such relationships in each State would prevent unnecessary duplication of work of a similar character in neighboring States and would coordinate it to a general purpose. The great problems of scientific investigations--better farming, better marketing, and better finance for rural people--can not be confined within the boundary of a State.

In the demonstration work the experience of the Department leads to the conclusion that the most effective organization is one of close cooperation. Demonstration work long administered by the State or by the Department alone might lead to the development of machinery of a harmful nature. In most of our Southern States we already have some form of cooperative understanding. If the work is carried on jointly under a cooperative agreement, equally financed, which places equal authority in each of the cooperating parties both as to policy and appointments, all such danger is reduced to an absolute minimum. I believe our plan of organization perfected in South Carolina nearly a year and a half ago to be ideal. Time forbids my describing it in detail. However, such agreements can not be mandatory. Cooperation involves personality, especially in admin-

istration. It succeeds only in proportion to the breadth of mind and purity of purpose of those directly concerned.

The form of cooperation is an important consideration. The authority for the expenditure of money conferred by Acts of Congress can not be carried out by turning over to another organization all power or authority save only the signing of vouchers. The duty and responsibility resting upon the Department and its representatives must carry with it a correlative authority. The Department's part in a cooperative relationship should be active and constructive, rather than passive judgment after the thing has been done. Our experience leads us to say that where both parties to the cooperative agreement have an honest, conscientious desire to do a really important piece of work which is clearly understood, there is very little danger of disagreement where the cooperative arrangement requires the assent of both parties. The opposite is true if either party fall short of these requirements.

From time to time suggestion has been made that the Department should abandon all extension work. To do so would cripple its usefulness, surrender a part of the duty placed upon it by its act of creation, and effectively close its opportunity for service. Information or knowledge is most valuable when in action rather than in mere possession. Problems like the boll weevil and other insect pests, some plant diseases and diseases of live stock are often too serious for a State to handle quickly and effectively. The Federal Department responds more quickly in emergencies. With a force in the field working

jointly for the State and the Department, the machinery for quick and effective action would be always present and results immediate. Numerous instances in the Department's work in the South might be mentioned.

An organization responsive to local needs may still serve a purpose in a larger relationship. The local need furnishes a problem often far outreaching the State lines, with factors like markets, transportation, and finance, which are not State limited. Both State and Nation can help. Cooperative effort can be helpful and not dominate. Duplication of effort can be avoided only by fairness and yet firmness in cooperative activities which have for their object a real service to the farmers of this country and not the aggrandizement of the Department or the College.

Mr. W. T. Swingle,
In Charge of Crop Physiology and Breeding Investigations.

In my opinion there is a field which the Federal Department can cultivate better than can any State or private agency. Likewise I believe there is another field in which the State Experiment Stations are easily supreme, and a third and very important field where the best work can be done by the more intelligent farmers themselves. As the work develops these three great agencies, Federal, State, and private, will gradually find the fields to which they are best adapted, and this will go a long way toward settling the problem of the proper relations of these three agencies to agricultural work and especially to agricultural research.

It is possible in a State, by working along the proper lines, to know every man of influence in the principal agricultural industries,



and through them to influence the entire development of these industries in a most effective and satisfactory way. This can be done by the Federal Government, but is always done at a disadvantage, because the administration at Washington can not possibly be in as close touch with the peculiar local conditions as the agencies of the State itself. This does not mean that all of the States or even more than a few of them have found out this fact, but it will be discovered sooner or later by the State Experiment Stations and then they will have reached their path of least resistance and one where they can most easily and most effectively excel this Department.

In order to do this work in the State in the most effective and most economical way the State must have an organization of as high a grade of efficiency and men of equal abilities to those engaged in Federal work. I believe it to be a matter of prime importance in securing harmonious relations between the Federal and State agencies that the Department should recognize that there is a field which the State can develop better than it can, and, moreover, we should aid the States to develop an effective organization along these lines. In other words, it is essential to the proper handling of our own work that the State Experiment Stations be powerful and they can not be powerful unless they come into intimate contact with local conditions, sentiments, and control. For my part I believe that Federal control of the State Experiment Stations would be a great misfortune both to the State and to this Department.

On the other hand, for problems of research covering a wide field, especially where observations taken in different States are

needed to corroborate tentative theories or to give new points to a problem that would often be difficult of solution from a single standpoint, the superiority of a Federal institution, such as the Department of Agriculture, as an instrument of research, is obvious.

It must be remembered, however, that in order to succeed in this work a certain kind of intellectual supremacy is absolutely necessary. This can be most easily secured by investigating broad and important problems in a concrete and matter-of-fact way, which makes the man in charge a leader of research along this line for the whole United States and if possible for the whole world. I am firmly convinced, however, that in carrying out these researches of general importance, concrete and matter-of-fact contact must be made, and that such contact can and will be made through the more intelligent farmers in the localities where the work is carried on. The liberty of cooperating with the best farmers and local experimenters should be retained. It will ultimately strengthen the work of the Experiment Stations as well as our work.

Agricultural investigations in the future will be more and more largely conducted by the more progressive farmers. These selected collaborators will be the intellectual leaders of their communities and as our theoretical knowledge becomes more and more perfect our experimental work will be reduced more and more to field demonstrations of what we have already established by scientific investigations. There can be no doubt that intelligent collaborators are best fitted to take detailed charge, under scientific supervision, of this kind of work. This will ultimately amount to a decentralization of experimental work.



Such collaborators will become interested in agricultural research and their children will have an interest in agricultural pursuits through the infusion of scientific interest into everyday problems of farm practice. These men naturally become the recipients of our publications, our new introductions, and our new creations secured through breeding.

In order to bring about closer relations between the Department and the Experiment Stations it seems to me essential that the State officers charged with the expenditure of Federal funds under the Hatch Act, Adams Act, and perhaps also under the Merrill Act, should meet once a year in convention at the Department and discuss policies with the officers of the Department. The discussions should be strictly limited to the proper expenditure of these various funds appropriated by the Federal Government, but may very properly be made to show the conflict, if any, between the work thus provided for in the States and that being carried out by the Department. By discussion these conflicts could be largely avoided.

On the other hand, the leading investigators of the Department should be encouraged to visit the Experiment Stations and Agricultural Colleges and spend sufficient time to get acquainted, not only with their colleagues carrying on similar lines of research, but also with administrative officers and the assistants and students. This might readily pave the way for temporary visits or even temporary employment of Experiment Station and College men in the Department or under Departmental auspices to work in States outside their own.

Harmful duplication of investigations can be largely obviated by means of annual conventions of Experiment Station and Agricultural College officials held at the Department in Washington, where this would be one of the vital questions brought up for discussion and settlement.

When investigations are conducted by three independent though correlated agencies there will always be more or less duplication of work. This is necessary, but is not necessarily disadvantageous. It has its benefits even, for just as the astronomer by observing a star from two different standpoints obtains ^{the} ~~his~~ parallax and measures its distance, so is precision in truth obtained by parallel but independent investigations of the same subject.

Prof. W. J. Spillman,
In Charge, Farm Management.

Investigations relating to fundamental questions which are independent of geographic considerations may be conducted in any place where proper facilities and properly trained men are to be found. In such work real cooperation between investigators is difficult to secure and is really unimportant. Greatest progress can probably be made in work of this kind by allowing each investigator the greatest possible freedom consistent with general purposes of the investigation and by giving adequate financial support.

On the other hand, all these problems which involve geographic factors must be studied over wide regions of varying geographic conditions in order to render it possible to discover underlying causes. It is in this class of problems where cooperation is most important, and fortunately most easily secured. I would include here most of the field experiments. I am of opinion that as a rule the field experiments conducted in this country have been planned without sufficient knowledge of the problems the solution of which is sought. Not only that, but the methods used by different investigators are so different that the results are usually not comparable. This fact was brought out strikingly in a recent tabulation of the field experiments with commercial fertilizers at the various Experiment Stations. In almost no case was the character of the soil adequately described in the publications giving the results of these investigations. In planning the experiments every investigator seems to be a law unto himself. The result is that almost no fundamental conclusions can be drawn from the immense amount of experimental work done along this line.

In the study of agricultural problems by study of farm practice it is even more important that the work should extend over wide areas in order to bring out the effect of various geographic factors. I believe that great advantage would accrue, both to the Department and to the State Experiment Stations, if closer cooperation could be effected in all our investigations involving climatic and soil influences. In such cooperation the function of the Department should be largely that of coordinating the work of the Stations so as to make results obtained in one locality comparable with those obtained in other localities.

In the very nature of the case a State institution can not

maintain a sufficient number of specialists to cover the whole range of agricultural problems. On the other hand, the Department approaches this ideal. These specialists in the Department, with suitable cooperative arrangements with State institutions, could be of immense service to those institutions in helping them to correlate their work with that of other institutions. This would save an enormous amount of useless duplication, and, I believe, result in much more stable progress than has been made heretofore in experimental work.

The cooperative relations existing between the State institutions and the Department in the demonstration work conducted by the Office of Farm Management have been developed with a view to accomplishing the purposes set forth above. The work is comparatively new and may be said to be in the experimental stage. At the present time the important feature of the cooperative relation between the Department and the States in demonstration work is the opportunity it gives to State leaders for exchanging ideas and discussing methods. The Office of Farm Management simply serves as an intermediary between the States. If an arrangement can be made, either by the help of this Department or without its help, by which the workers of the Experiment Stations could be brought together frequently by geographic regions so that they might discuss in detail the problems on which they are working and the methods they are using I think this would be very advantageous. We recently brought together ten of our State leaders out at Chicago for a day's conference and each one of them expressed the kindest appreciation of the opportunity for getting together and exchanging ideas with his colleagues. They all said it was a highly profitable one and urged that other similar meetings be held.

It has been found advisable to leave the immediate direction of the work entirely in the hands of the States. State leaders have been eager for suggestions from the Department, and have shown intense interest in the conferences which have been called. As a result of the cooperation the work is developing rapidly and satisfactory methods of work are being disseminated.

In general I believe that one of the most important functions of the Department of Agriculture is that of correlating the work of the State Institutions. In addition to this, the fact that the Department is in position to maintain a large number of specialists on what may be termed very narrow fields makes it possible for the Department to serve to some extent as an interpreting agency. It is important that the greatest freedom consistent with our dual political organization in this country should be given to scientific workers of all kinds; but in order to avoid unnecessary duplication it seems desirable that in so far as possible all the work of the Department should be correlated with that of the States and the work in each State with that in other States in so far as such correlation is advantageous.

Mr. K. F. Kellerman,
In Charge, Soil Bacteriology and Nutrition.

The relation of the Department to Experiment Stations should be analogous to the relations existing between the War Department and the State constabulary or municipal police. The Experiment Station and Agricultural College forces should be supreme in local affairs, but ex officio responsible to the Department for carrying out certain legal requirements concerning interstate questions. Interstate quarantine

regulation is logically a subject for Federal control, but except at ports of entry should be developed on a basis of divided duties and as far as possible of joint responsibility with State officers. In questions of emergency, where local affairs might have an important even though indirect interstate bearing or where local forces were not adequate for handling emergency conditions, the Federal authority should temporarily assume control.

The policy of the Federal Department should be to develop especially as the research center, not only in the technical questions of disease control, crop production, the distribution and marketing of farm products, etc., but should also inaugurate elaborate research in farm economics, especially the relation of real estate manipulation and land capitalization to farm production and farm sociology. These investigations wherever possible should be international rather than domestic in scope. This is especially true in regard to the study of the problems of plant breeding. There is little danger of our injuring State institutions, except temporarily, through taking charge of the control of sudden outbreaks of new or unusual diseases or in forcing quarantine or other regulations in interstate dealings. The State organizations, because of their local touch, are better situated to develop genuine support through State pride as well as through local efficiency. Unless Federal extension and demonstration are to be overdeveloped and substations established as competitors of the State Stations, Departmental activity should serve only to stimulate State support for State institutions.

It does not appear impossible to gradually reorganize demonstration and extension work so as to divide responsibilities as well as

financial support between the State institutions and the Federal Department.

A Departmental extension journal under Federal supervision and control should be established for the constant exchange of ideas of the State extension and demonstration officials as well as for distributing the ideas of our supervising or visiting agents. In some phases of work Federal support and direction might be further developed, for the stimulation of interest, through centralization in the discussion or exhibition of results of single lines of extension, such as the centralization of the corn-club movement. Federal money, if granted along the general lines of the Lever bill, should be awarded to State organizations for extension or demonstration work upon either special or general problems by the Secretary of Agriculture with the advice of a committee of Bureau Chiefs and Station Directors.

Closer relations between the Federal and State organizations may be brought about by developing in each a more sympathetic point of view. Federal officials should be encouraged frequently to visit State institutions and to plan cooperation on a friendly basis of mutual interests rather than upon a basis of official diplomacy. As far as is consistent with the development of interstate problems, the local studies, unless of an emergency character, should be developed with the sanction and where feasible with the aid of the State organization.

Duplication of work is to be avoided partly by improving the relations between the Department and Experiment Stations and partly by developing the Departmental research problems on a larger scale, and as far as possible covering principles rather than minute details of local questions. Where organizations work simultaneously or in cooper-

ation upon local problem the publication should be by the Station, and abstract publication, especially of the more pretentious research bulletins, should be by the Department. An exact duplication of publications in the Department and Experiment Stations is not desirable as a general policy.

Mr. D. G. Fairchild,
In Charge of Foreign Seed and Plant Introduction.

In considering the relation of the Department toward the Colleges and Stations, it seems to me we should distinguish between its various activities--educational, police, and research.

Should the Department, for example, carry on educational work in agriculture and how should it be done? In my opinion it should carry on this work, but not independent of the State colleges. Federal teachers of elementary agriculture should be attached to the State institutions or come under their local control, even though there were one Federal coordinating agency which outlined the general policies of such work.

What should be the relation of the policing activities of the Department to the colleges and stations? This ought to be defined by the interstate character of such work. Whatever is of an interstate or international nature ought to be handled by the Department, leaving local questions to the Stations.

Should the Department maintain a corps of research men and what should be their relations with the research men of the Colleges and Stations? In my opinion the Department should maintain a corps of research men, but it should be such a corps as will attract to it the very

best minds in the country, and conditions should be shaped so that they will be attracted to it instead of repelled from it.

The research men of the Department should, by reason of their broader opportunities, be engaged upon problems of more than mere local importance, and men desirous of studying the fundamental problems of agriculture should find the best facilities here rather than at the universities, else the Department as a research institution will drop out of sight. I do not see how any regulations will affect the interrelations of Stations and Department research men if they are competing on the same plane for local problems and with independent opportunities for publication.

I would suggest as a policy of the Department--

(1) That it throw into the hands of the State institutions more of the correspondence relating to purely local questions, such as the proper season in which to plant potatoes or how to plow sod, instead of building up correspondence schools at Washington. As an actual fact, there is at the present time so much of this correspondence carried on that some of the Stations have come to regard the Department as the proper agency for the carrying on of this elementary instruction.

(2) That the Stations established by the Department for special investigations should be on a more avowedly temporary basis than at present, and when the truly Federal work is finished they should be either abandoned or turned over to the State Stations to administer. Local stations for the investigation of purely local problems should

not be independently maintained by the Federal Department in the States, but as substations, and the questions of personal friction between the State authorities and those of the Federal Stations should be adjusted rather than shunned. It ought not to be possible to get a bill through Congress establishing a local station, supported by Federal funds, to deal with local problems and to be run entirely independent of existing State Stations.

(c) The Station Directors and College Presidents should be made to feel that they are just as responsible to the Secretary of Agriculture in so far as they administer Federal funds as are the Chiefs of Bureaus and officers here in Washington, and should be under the same code of financial and public responsibility as are the Federal men. In order to bring about the closer relations desired why should not these Presidents and Directors, together with the Chiefs of Bureaus and Offices, be formed into an advisory council to the Secretary in all matters relating to their respective States and the official meetings of this council for the free discussion of Federal policies be held regularly in Washington instead of in various parts of the country? Why should they not be consulted in the framing of appropriation bills which affect their respective States and the inauguration of all policies that affect their position before the people of their States, and why should not their intercourse with the Department lead to an exchange of men which would make the whole a single instead of two more or less separate systems?

Demonstration work, in so far as it is elementary, educational, and carried on with Federal funds, should be done in close coopera-

tion with the State agricultural extension work to which it is similar in kind. The prestige which the Federal Government gives to such work should be extended to the State Colleges, and it should not be possible for farmers to look down on State College work because they are associated with the supposedly larger Federal work.

Closer relations with the Colleges and Stations might be brought about, it seems to me, by the organization of the Department's publications in such a way that papers of wide interest should appear as Federal bulletins; by the establishment of a weekly periodical in which the interesting discoveries at the Stations, as well as those of the Washington Bureaus, should be promptly and fully published; by cutting out of all purely local projects from the program of the Department; by answering correspondence of a purely local character through the State Stations; and by the establishment of an advisory council to the Secretary, composed of the Presidents of Colleges, Directors of Stations, and Chiefs of the Department.

Prof. Milton Whitney,
Chief, Bureau of Soils.

A discussion of the relations of the Department to State Agricultural Colleges and Experiment Stations and their relations to the Department is necessarily an intricate one. I shall confine my remarks entirely to that phase of the subject which deals with the practical relations in experimental and demonstrational work, omitting for the present the purely educational features of collegiate instruction. The motive for the work of the Department and the Experiment Stations is much the same, namely, the discovery of new facts

in agriculture and their practical demonstration and dissemination among the people who follow agriculture as a vocation. Cooperation between the Department and the Stations is therefore highly desirable, and in fact sometimes a necessity for accomplishment of the greatest good by either agency.

Although highly desirable, cooperation is not always feasible, for the methods of carrying out the work are sometimes so at variance that the best results are obtained and the truth finally reached if both agencies work out the details along their own developed lines of thought. This is especially true of the experimental side of the subject, where the discovery of natural truths is concerned. Cooperation is here also desirable, but possible only between investigators as individuals and not between institutions. When, however, the subject has reached that stage where the results are to be demonstrated to the people for their practical guidance in the management of farm, orchard, or greenhouse, then I believe the Stations and the Department can well cooperate to achieve the widest possible ^{dissemination} ~~discrim-~~ ination and the greatest good to the farmers of the Nation. Some of their movements may be regional only; others are national in scope, though varying perhaps from section to section or State to State. The National movement can, therefore, very profitably avail itself of the organization and detailed knowledge of State needs possessed by the Experiment Stations and in return unify their efforts throughout the States, where such efforts are already being made, and stimulate and organize such efforts in States where such movements for one reason or another are not already under way, with the result that

t e movement becomes Nation-wide and not restricted to the isolated efforts of individual States especially blessed with liberal legislatures or energetic and enthusiastic Station workers.

In considering the question as to the future policy of the Department in shaping its work so as to meet the demands of the people and at the same time support and uphold the institutions within the States, it becomes necessary to say that such State institutions should be considered by the Department as useful agencies in the organization of a Nation-wide movement. When, of course, such an institution can not be brought to see that it would be useful in this capacity and declined to share in the movement cooperatively, whether it be for the reason that it is already engaged in similar work and prefers to work out the problem for itself, or whether it be through blind prejudice, the Nation-wide movement for the betterment of the farm, authorized by the people of all the States through Congress in its appropriations for the work of the Department, must necessarily go forward so that the people of all States may reap the benefit of the work. The closest harmony can exist only when the Stations properly understand the Nation-wide movement of the problem under consideration for cooperative demonstration. When of course work of a similar nature is already under way in a State along lines similar to those contemplated in this National work by the Department the organization already existing in the State should be considered as a basis for the new organization which will carry the work forward on the cooperative scheme in that State, but in such a way that the movement as a whole will be in harmony with the National project and National

aims.

One of the things that will bring about a closer relation between the State Experiment Stations and the Department will be the realization by the Experiment Stations that in addition to representing their own States they are a part of the National organization to investigate and demonstrate agricultural science and practises for the benefit of the people of all States and receive from the National Government a not inconsiderable grant for that very end. For a better understanding of the National scope of many of the economic and practical movements which are now taking place in our National agriculture, the attendance of Department workers at National meetings where such problems are discussed would seem imperative, and further it would seem desirable to call a conference from time to time, perhaps annually, of the heads of Experiment Stations and Department heads at Washington, for the purpose of discussing National problems pertaining to agriculture, with the end in view of bringing National endeavor and State endeavor into the closest harmony.

, Prof. L. C. Corbett,
Assistant Chief, Bureau of Plant Industry.

The States have definite local offices to perform, both educational, investigational, and administrative. The Department should not interfere in these, but whenever called on should act in the capacity of adviser, counselor, or teacher. The Department's relation to the State Agricultural Colleges and Experiment Stations should be that of a big brother--friendly, sympathetic, and helpful. The Department must recognize the State agencies, whether supported by local

or Federal funds, as colaborers in a common cause.

There are clearly National problems, in which the States function locally, which must be taken up, investigated, exploited, and administered by Federal agencies. Interstate problems should be handled independent of or in cooperation with State agencies, depending on the nature of the investigation.

The Federal Government should refrain from carrying on investigations having local application only and should guard against becoming an agent for local enterprises.

The establishment of local Experiment Stations and local farms by the Federal Government should be discouraged, except in cases where such a local station is essential to the prosecution of a broad project. At such stations local work should not be undertaken by Federal agencies. If it is to be carried on it should be done under a cooperative agreement with the State authorities and financed and manned from State sources.

The future policy of the Department in shaping its work so as to meet the demands of the people and at the same time support and uphold the institutions within the States should be to continue to handle extraordinary and emergency conditions in such a way as to be of the greatest benefit to the locality affected, but in such a way as to maintain the work on a temporary rather than a permanent basis, unless Congress sees fit to establish some feature of it permanently. In all cases such work should be undertaken in cooperation with the State agencies best equipped to cooperate with the Federal authorities. Some of these activities will, of necessity, become permanent,

and the character of the work will determine whether its future prosecution shall be undertaken by Federal or by State authority or whether it shall be conducted in cooperation.

The policy of the Department in the organization of demonstration and similar work in its relation to State institutions should be to develop the actual contact which is maintained with the people in such a way that as soon as the States are financially able they may take over the local supervision of the work, the Department maintaining a general supervisory interest to the extent of cooperation in financing State leaders. District agents must, of necessity, be maintained under Federal authority in order that the work, if Federal funds are to be used in its prosecution, may be properly administered and coordinated. I believe the general policy should be to encourage the States to maintain themselves as rapidly as possible.

Closer and better relations with the State Agricultural Colleges and Experiment Stations can, it is believed, be brought about by more frequent personal contact of the administrative officers of each. Personal acquaintance is an essential feature in successful cooperative contacts.

Cooperative relations existing between investigators widely separated in interests and locations are not always clearly understood by executive officers through which the contacts must be maintained, the personal equation in each case working either to harmonize or to disrupt the agreement. In the past some Station authorities have felt that the Department people were offices and not human entities.

It is believed that duplication of effort can be avoided to the extent that a project system, with the Department as a clearing house,

can be maintained among the Stations. It is unfortunate, to my mind, that this could not have been foreseen at the time the Hatch Act was framed, and that in addition to the authority to examine and audit the accounts of the Colleges and Stations authority was not extended to include a censorship of the scientific work of the stations to the extent of truing it with the appropriation and coordinating it among the different Stations. Financial supervision will never accomplish this. The loss of effort and money resulting from duplication can be prevented only through a project system centered in the Department of Agriculture. To enforce such a system the Department must be clothed with the authority to approve projects.

Dr. E. W. Allen,
Assistant Director, Office of Experiment Stations.

As a central agency, commanding superior facilities, the activity of the Department should be National in a true sense. It should exercise leadership in providing for the large problems of agricultural science and practice throughout the country. This will naturally bring the entire American system of agricultural research and instruction within the range of its interest, and lead to the consideration of how it can best be made to cover the needs of American agriculture. Such a view of the Department's National function is important to a full realization of its usefulness.

Its highest efficiency in this regard implies not only a recognition of the local or State agencies for research and instruction, but active participation in their development and strengthening. This is conceived to be one of its most useful functions--the development of self help, on which reliance must largely rest, through the

spirit of encouragement, stimulation, cooperation, and close sympathetic relationship, rather than any suggestion of displacement, unfriendly competition, or elimination. It is essential that the position of these institutions in the States should be upheld. Any tendency to duplicate them locally by establishing an organization or equipping independent experimental farms and stations to do similar work is opposed to this.

The relation between the Department and the State Colleges and Stations must rest on acceptance of the fact that there are certain things which from their position and facilities each party is especially fitted to do and certain other things which can best be done in cooperation. This, with an understanding of what each is doing and an attitude of frankness and mutual helpfulness furnishes the keynote of the relationship. The country should not suffer from jealousies, and each should be considerate and reasonable. There needs to be more getting together.

The exact field which each party should cover is not so much a question of authority as of wise judgment. In this the public welfare and the greatest permanent benefit are above personal ambition or institutional aggrandizement. The Department should not plan to cover the whole field of agriculture in its local aspects, even if encouraged to do so, or attempt to meet all the suggestions for work or requests for information that come to it. It should rather follow a well-defined policy of assuming leadership in National movements or undertakings calling for united action, and of directing its superior facilities to the working out of large or intricate fundamental problems, thus supplementing the work of the State institutions. It

may sometimes deflect to the latter matters, which properly come within their scope.

If in its anxiety to meet local needs Congress inclines to make appropriations directly to the Department as its nearest neighbor, authority might be secured to work through the agricultural Colleges or Experiment Stations, thus preserving its field and upholding its position with the local constituents. Encouragement of the farmers to look to the Department people to solve their problems and instruct them in good practice, temporizes with the situation and weakens the position of the local institutions.

Aside from certain matters which are clearly its own, for example National forests, the Department may well work with and through the State institutions to the largest practicable extent.

Cooperation ought to be on a mutual basis, which recognizes both parties. It should not be proposed on a take-it or leave-it basis. It implies much more than the passive consent of the other party. Real cooperation makes the general policy, the plan, the execution, and the working out of the results of mutual agreement.

In research proper, a division of the field and independent study are often desirable. In this the Department should choose its problems thoughtfully and with due regard to what is already in progress. As long as the established rules of courtesy prevailing among men of science are recognized there can be little ground for complaint of independent study by either party. The field of research is broad enough at present and the men of vision are not at a loss for problems; but they ought to be given opportunity to work out thoroughly what they have undertaken without fear of their field being quietly invaded.

The encouragement of a spirit of frankness and absolute fairness in dealing with the work of others, and some means for dealing with infractions of the scientific code of ethics would allay suspicion and tend to closer relations between workers.

There can be no valid objection to the demonstration or testing out or bringing into practical form of discoveries made by the Department, and the States should promote this as they have in the case of the hog cholera serum. But most of our extension work deals rather with information of mixed origin and general knowledge. It is popular instruction, teaching by example and advice, and hence must be adapted to local conditions. Like other instruction, it is essentially a local matter and should be organized in cooperation with and locally under the direction of the States. The Department may properly exercise a leadership in the movement and aid it in many ways, but it should be planned with a view to forming a part of the extension work of the Agricultural Colleges, which are closer to the needs and to the farmers and can better control the agents who are doing the work.

Close and harmonious relations are largely a matter of attitude. The first step in that direction is the manifestation of a desire and readiness for closer relations. More frequent intercourse between the Department and the State institutions through their representatives, with conferences on proposed cooperation or the extension of new activities which affect the States, would enable a frank discussion of policy and a clearer understanding of the points of view, and afford assurances that the interests of all parties were being considered. Any division of the field must be progressive, and a

joint commission on cooperation and definition of the work, such as was formerly proposed, might be of notable service in maintaining an adjustment and preventing unnecessary duplication.

Mr. C. S. Scofield
In Charge, Western Irrigation Agriculture.

The existence of two distinct Government agencies engaged in agricultural work in this country is to be regarded as an unfortunate condition, but it is nevertheless a condition which appears likely to continue. In the light of twenty-five years experience it seems certain that were we now to create de novo a system of agricultural investigation and education in this country we would avoid the double system which we now have.

It is probably out of the question, even were it desirable, to establish a definite line of demarcation between the activities of the Federal Department on the one hand and the State institutions on the other. Both agencies are now in the field; both are likely to continue, and the problem is to bring about relationships between them which may result in the greatest efficiency of service. One of the simplest and most direct ways to do this is to provide for a more frequent interchange of workers between the two branches of our agricultural service. If a man is employed for a time in a State institution on a problem and is later employed in the Federal Department on the same problem, and still later returns again to the State institutions, he is much less likely to cherish suspicion or to feel intolerant toward either institution than if he is employed continuously and exclusively in one of them.



Another opportunity for cementing the relationships between the Federal Department and the State institutions lies in sending Department men to State Colleges for short lecture courses. Our experts need the sort of mental stimulus that comes from occasional contact with students, and they also need to keep in touch with these educational institutions, from which we must draw our supply of young men to carry on the work.

There is another and very distinct point which might be made in reference to Federal and State relationship. Our agricultural industries and our agricultural problems are mostly regional in nature, that is, they are in a majority of cases not limited within State boundary lines. Men in the Federal Department, therefore, are in a position to attack these problems more effectively than is the case often with men whose activities are definitely circumscribed by the boundaries of the State in which they work.

We find ourselves wasting much valuable time discussing as to whether a problem is of local or general nature to determine whether it should be taken up by the Federal Department or by the State. Such discussion is ordinarily quite fruitless. There are plenty of problems to solve--many more than we have men or means to undertake. The people who are paying for our work have a right to demand that we get at it and work together effectively.

If we in this Department proceed to establish the fact that our agriculture is made up of regional problems, and if we proceed to indicate the character of these problems and the limits of the regions, we shall have rendered unnecessary much of the discussion as to which agency shall do the work.

CONSTRUCTIVE SUGGESTIONS.

The following is a brief resumé of constructive suggestions culled from the foregoing papers:

Dr. A. C. True.

1. The Department and the State institutions should divide the field through mutual understanding along three lines: (1) Things the Department can best do by itself, (2) things the State institutions can do, and (3) things that can be done best through cooperation.
2. Equality of cooperating parties should be recognized.
3. The State institutions should be informed in advance of taking up new lines of work within the State and should be kept informed of the plans and scope of the work.
4. Projects should be prepared carefully in the Bureaus and should be reviewed by the general officers of the Department or by committees acting under their direction prior to putting the work into operation.
5. The rank and file of the Department's workers should be infused with a spirit of sympathy and helpfulness towards the State institutions.
6. High standards should be maintained for the use of funds granted to the States but administered by the Department, and the State institutions should be led up to these standards progressively and through their own initiative.
7. Keep in close touch with the State institutions and their general Association. The Department might well be represented on a standing Committee on Relations of the Department and State Colleges and Stations.

8. Reach and influence the Governing Boards of the State institutions.
9. In the case of weak or ill-managed institutions make an effort to strengthen rather than supersede them. Make the institutions feel they are natural associates and allies of the Department rather than rivals.
10. Department's leadership should come through intrinsic merit and ability rather than through amount of money it has to distribute.
11. Invite frank expression of opinion about the Department's work and policies.
12. Give each man his best chance and make him feel that he must work heartily and sympathetically with his fellows.

Mr. W. A. Taylor.

1. Encourage State institutions to handle distinctly local and State questions.
2. Establish and maintain courteous and frank relations with the personnel of State institutions.
3. Department workers should aid the development and usefulness of the Stations by emphasizing the need of adequate support and commending their meritorious work.
4. Insist that the States equip and develop their own agencies for the solution of local problems rather than rely on long-continued Federal aid.
5. Work out an effective plan of cooperation in demonstration work which will insure definite responsibility for efficiency of work and expenditure and accounting of funds.
7. Arrange with Stations and Colleges for more frequent exchange of views in conferences between administrative as well as scientific workers.
8. Consult the Office of Experiment Stations before planning new lines of work so as to avoid duplication and advise Congressional Committees where proposed appropriations would bring about duplication.

Mr. Bradford Knapp.

1. Cooperate with the Experiment Stations and Agricultural Colleges except in the Department's police work.
2. Cooperation in demonstration work would minimize the danger of the organization's being used for political purposes, which use would be fatal to the work.
3. The Department's part in cooperative work must be active and constructive. Its responsibility can not be fulfilled in such work by the mere signing of vouchers.
4. To abandon extension work, as has been suggested from time to time, would be to cripple the Department's usefulness and surrender a part of the duties imposed on it in the act by which it was created.

Mr. W. T. Swingle

1. Recognize the fact that at the Department, the State Experiment Stations, and the more intelligent farmers each have a field which each can develop better than the others.
2. The Department should not take away the State's best men just when it has developed an effective organization.
3. The Department must retain its right to cooperate with the best farmers and local experimenters.
4. Decentralize experimental work as far as possible by putting it in the hands of intelligent collaborators.
5. State officers charged with the administration of Federal funds should meet in convention once a year in the Department and discuss policies.
6. Leading investigators of the Department should visit the Stations and Colleges and become acquainted with co-laborers along similar lines of work, with administrative officers, and with students and assistants.
8. Harmful duplication of work can be prevented by holding annual conventions of Experiment Station and College officials at the Department. The fact should be recognized that by no means is all duplication of work harmful.

Prof. W. J. Spillman.

1. Cooperation is not important in the case of problems which are independent of geographic consideration, and such problems may be carried on at any place, but is important in problems involving geographic factors.
2. Standardize investigators' methods so as to make results comparable.
3. Cooperate more closely with College and Station workers on all questions involving soil and climatic influences. The Department's function in such cases should be largely coordinative, so as to make the results obtained at each Station comparable with those obtained at all other Stations.
4. Bring the Station workers together frequently by geographic regions.
5. Correlate the work of the State institutions and with it the work of the Department.
6. Give the greatest possible freedom consistent with our dual political organization to scientific workers.

Mr. K. F. Kellerman.

1. Interstate quarantine regulations should be under the control of the Federal Government, but except at ports of entry should be developed on the basis of divided responsibility with the States.

2. The Department should develop as the center of research and should inaugurate elaborate research in farm economics, especially the relation of real estate manipulation and land capitalization to farm production and farm sociology.
3. Establish a Departmental extension journal under Federal control and Federal supervision for the exchange of ideas of State extension and demonstration officials and dissemination of the ideas of the Department's supervising or visiting agents.
4. Federal centralization of discussion or exhibition of results in certain lines, such as the corn clubs, might be advantageous in developing general interest and support.
5. Federal money, if granted to State organizations for specific problems along the lines of the Lever bill, should be allotted by the Secretary of Agriculture, with the Bureau Chiefs and Station Directors acting as an advisory committee.
6. Federal officers should visit State institutions more frequently and plan cooperation with them on a friendly rather than an official basis.
7. In developing interstate problems the local studies should be developed, wherever feasible, with the aid of the State organization.
8. When organizations work simultaneously or cooperatively on local problems detailed publication should be by the Station and abstract publication by the Department.

Mr. D. G. Fairchild.

1. Carry on educational work by placing Federal teachers of elementary agriculture in State institutions.
2. The Department should handle all problems of an interstate and international nature and should leave the local questions to the Stations.
3. The Department should turn most of the correspondence relating to local questions into the hands of the Experiment Stations rather than build up "correspondence schools" at Washington.
4. Establish Departmental field stations on a more temporary basis than they are at present, and when the Federal work is completed abandon them or turn them over to the State Stations.
5. Departmental field Stations for investigation of purely local problems should be maintained as substations of the State Experiment Stations.
6. Directors of the Experiment Stations and Presidents of the Agricultural Colleges should be made to feel as much responsibility to the Secretary of Agriculture for administration of Federal funds as do the Chiefs of Bureaus in the Department, and should be under the same code of financial and public responsibility.
7. In order to bring about closer relations why not form an advisory council to the Secretary, consisting of Directors of the Experiment Stations, Presidents of Colleges, and Chiefs of Bureaus and other branches of the Department, the meetings to be held regularly in Washington. This advisory council should deal with the framing of appropriation bills which affect the agricultural interests of the States.

8. Arrange for interchange of workers in the Department and the Stations with a view of making the Federal and State agencies a unit instead of separate systems.
9. Carry on demonstration work, in so far as it is of an elementary and educational character, in close cooperation with the State agricultural college extension work.
10. Establish a weekly periodical, in which interesting discoveries, which are not of a local nature, made by the Stations, as well as those made by the Department, shall be published promptly.

Prof. Milton Whitney.

1. The Department and the Stations should cooperate in demonstration work.
2. Where the Experiment Stations and Colleges decline to cooperate in cases of nation-wide improvement, the work should necessarily go forward, but if the work on similar lines is under way in the State in which such Station or College is located, this work should be used for the basis of Federal work.
3. Departmental workers should attend National meetings held to consider agricultural problems.
4. Conferences should be held in Washington, probably annually, of Directors of Experiment Stations and officers of the Department for the purpose of discussing national problems pertaining to agriculture and for the purpose of putting them into closer harmony.

Prof. L. C. Corbett.

1. The Department should act as adviser or teacher in educational, investigational, and administrative work in the States only when called on to do so.
2. The Department should not carry on investigations which are of local application only, and it should guard against giving aid to the exploitation of local enterprises.
3. Local Stations and farms should be maintained by the Department only when necessary in connection with broad projects. Any local work undertaken at such Stations or farms should be done in cooperation with and manned by the States.
4. Work undertaken to handle extraordinary or emergency cases should be maintained when possible on a temporary basis and in cooperation with the State.
5. Demonstration and similar work in the States which is being done by the Department should be developed so that as soon as the States are able the local application of the work can be made by State agencies, the Department maintaining a joint supervisory and coordinating interest to the extent of contributing to the salary of State leaders and maintaining district supervisors.
6. Encourage the States to maintain themselves as rapidly as possible.
7. More frequent contact between administrative officers of the Department and of the States will bring about closer and better relations.

8. Duplication of work can be avoided in proportion to the extent that project systems for the Department and Station work, with the Department as a clearing house, can be maintained.

Dr. E. W. Allen.

1. The Department should exercise leadership in providing for large problems of agricultural science and practice throughout the country, considering how the American system of agricultural education and research, of which it forms a part, can best be made to cover the needs of American agriculture.
2. Development and strengthening of local or State agencies for research and instruction form one of the Department's most useful functions. Duplication of these institutions locally by establishing an organization or equipping independent experimental farms and stations weakens their position and should be avoided.
3. Appropriations made to the Department for purely local matters might well authorize the carrying on of the work through the Agricultural College or Experiment Station. In this way its position would be upheld and its field preserved.
4. Cooperation should be on a mutual basis, and should embrace the planning, execution, and working out of results.
5. In research proper the Department and the Stations should each be free to conduct independent studies, always with a mutual understanding, a regard for what is already in progress, and security of workers against unethical competition.
6. Extension and demonstration work rests very largely on general information rather than on original discovery, consequently like other organized forms of instruction should be under local direction.
7. Demonstration work promoted by the Department should form a part of the extension work of the Agricultural Colleges.
8. There should be more frequent intercourse between the Department and the State institutions through their representatives. A joint commission on cooperation and definition of work might render good service in maintaining adjustment and preventing unnecessary duplication.

Mr. C. S. Scofield.

1. Provide for more frequent interchange of workers between the Department and the Stations.
2. Send Department men to State Colleges to give short lecture courses.
3. Establish the fact that our agriculture is made up of regional problems, and indicate the character of the problems and their regional limits.

Approved:

D. F. Houston,

Secretary of Agriculture.

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